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|-------------------------------|----------------------|--------------|--|
| <b>Notice of Allowability</b> | Application No.      | Applicant(s) |  |
|                               | 09/901,188           | INOKO ET AL. |  |
|                               | Examiner             | Art Unit     |  |
|                               | Kandasamy Thangavelu | 2123         |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to November 22, 2005.
2.  The allowed claim(s) is/are 1,2,5-17,19 and 20.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other Clean copy of allowed claims.

## **DETAILED ACTION**

### ***Introduction***

1. This communication is in response to the Applicants' communication dated November 22, 2005. Claims 1, 3 and 4 were amended. Claim 20 was added. Claims 1-20 of the application are pending.

### ***Examiner's Amendment***

2. Authorization for this examiner's amendment was given in a telephone interview with Mr. Luke Kilyk on December 27, 2005.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. The application has been amended as follows:

In Amended Claim 1, Lines 1-8:

"A Programmable Logic Controller ("PLC") system construction support tool for simulating a selection of units and a combination thereof on a screen before a PLC system is actually constructed, said PLC system construction support tool comprising:

a first screen for displaying a list of various units which can be selected for constructing a PLC system, wherein the list of various units comprises units making up a PLC system; and

a second screen for displaying the units selected from the first screen in the same configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen, wherein the second screen displays the information in"

has been changed to

-- A Programmable Logic Controller ("PLC") system construction support tool for simulating a selection of units and a combination thereof on a screen before a PLC system is actually constructed, said PLC system construction support tool comprising:

a first screen for displaying a list of various units which can be selected for constructing the PLC system, wherein the list of various units comprises units making up the PLC system; and

a second screen for displaying the units selected from the first screen in a configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen, wherein the second screen displays information in --.

In Claims 3 and 4:

Cancel claims 3 and 4.

In Claim 5, Lines 1-4:

“The PLC system construction support tool as claimed in claim 2, wherein the second screen displays the units selected from the first screen on a plurality of rows in the same configuration of rows as the units are actually displayed on said first screen, and displays the information in numerical form in an area adjacent to the corresponding row of the units”

has been changed to

-- The PLC system construction support tool as claimed in claim 2, wherein the second screen displays the units selected from the first screen on a plurality of rows, and displays the information in numerical form in an area adjacent to each corresponding row of the units, --.

In Claim 14, Lines 3-4:

“a second placement unit for automatically displaying a repeater unit at each of the termination of a first row and the beginning of a second row”

has been changed to

-- a second placement unit for automatically displaying a repeater unit at termination of a first row and at beginning of a second row --.

In Claim 15, Line 3:

“a third placement unit for automatically displaying an end unit at the termination”

has been changed to

-- a third placement unit for automatically displaying an end unit at termination --.

In Claim 16:

Replace claim 16 with:

16. A Programmable Logic Controller ("PLC") system program development support tool comprising:

a PLC program creation tool for creating a ladder program and creating a program converted into instruction commands to operate a PLC system in accordance with the created ladder program; and

a PLC system construction support tool built in said PLC program creation tool for simulating a selection of units and a combination thereof on a screen before the PLC system is actually constructed, said PLC system construction support tool comprising:

a first screen for displaying a list of various units that can be selected for constructing the PLC system, wherein the list of various units comprises units making up the PLC system; and

a second screen for displaying the units selected from the first screen in a configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen, wherein the second screen displays information in numerical form in an area adjacent to a row of the units on the second screen, the information comprising total values of at least one of current consumption, voltage consumption, width, and weight of each of the units displayed on the second screen; and

a unit type data file storing at least one of the current consumption, the voltage consumption, the width, and the weight of each of the units displayed on the first screen,

wherein whenever a unit is selected from the first screen, at least one of the current consumption, the voltage consumption, the width, and the weight of the selected unit is read from the unit type data file and displayed on the second screen.

In Claim 18:

Cancel claim 18.

In Claim 19, Lines 1-5:

“The PLC system program development support tool as claimed in claim 17, wherein the second screen displays the units selected from the first screen on a plurality of rows in the same configuration of rows as the units are actually displayed on said first screen, and displays the information in numerical form in an area adjacent to the corresponding row of the units”

has been changed to

-- The PLC system program development support tool as claimed in claim 17, wherein the second screen displays the units selected from the first screen on a plurality of rows and displays the information in numerical form in an area adjacent to each corresponding row of the units--.

In Claim 20:

Replace claim 20 with:

20. A Programmable Logic Controller ("PLC") system construction support tool for simulating a selection of units and a combination thereof on a screen before a PLC system is actually constructed, said PLC system construction support tool comprising:

a first screen for displaying a list of various units which can be selected for constructing the PLC system, wherein the list of various units comprises units making up the PLC system and wherein the list comprises at least one graphical icon that is selectable and adapted to be displayed the on second screen;

a second screen for displaying the units selected from the first screen in the same configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen, wherein the second screen displays information in numerical form in an area adjacent to a row of the units on the second screen, the information comprising total values of at least one of current consumption, voltage consumption, width, and weight of each of the units displayed on the second screen; and

a unit type data file storing at least one of the current consumption, the voltage consumption, the width, and the weight of each of the units displayed on the first screen, wherein whenever a unit is selected from the first screen, at least one of the current consumption, the voltage consumption, the width, and the weight of the selected unit is read from the unit type data file and displayed on the second screen.

**A clean copy of allowed claims is attached.**

***Reasons for Allowance***

4. Claims 1-2, 5-17 and 19-20 of the application are allowed over prior art of record.

5. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The closest prior art of record shows:

(1) a system for design, simulation and implementation of an automated manufacturing process; a control engineer uses process information to generate the control information and select and configure control mechanisms including a programmable logic controller (PLC), sensors, actuators, electrical lines and hydraulic tubing; the control engineer generates a control system schematics using CAD systems and generates execution code to execute on the PLC to implement the automated manufacturing process; the PLC is programmed using ladder logic (LL) which assumes that the controller is composed of multiple relays; the system describes a control assembly for each mechanical resource that needs to be controlled; the control assembly includes the schematic and control logic for the controller; a simulator is used to simulate the control process and view animation of the control process; a designer studio is used for designing and simulating a controller; the designer studio displays the control assemblies designed (**Coburn et al.**, U. S. Patent 6,618,856);

(2) Programmable logic devices (PLCs) interface electromechanical devices with logic based control sequences for monitoring, controlling and enunciating activities in a specific controlled process; a programmable logic controller having a process means, a sampling means

and a diagnostic means to invoke discrete incremental states representing non discrete intermediate inputs from electromechanical sensors within programmable control schemes; the controller employs non discrete intermediate values of voltage, current or resistance for invoking logic based control sequences to operate electromechanical devices such as solenoids, relays, lamps etc.; the controllers are applicable to analog inputs that are converted into discrete incremental states to satisfy the operational requirements of logic based program control sequence (**Moore et al.**, U. S. Patent 6,640,264); and

(3) an accurate gas injection system including a mass flow controller, a programmable logic controller (PLC), an input device and an output device connected to and powered by a power supply; the mass flow controller receives flow control signal issued by the PLC and is configured to control the rate of flow of gas through it in response to the flow control signal; the input device is used to input setpoint data including a target flow rate of the gas into the system; the gas flows through the mass flow controller at an actual flow rate; the mass flow controller issues a flow rate signal indicative of the actual flow rate and receives a flow rate signal; the mass flow controller is configured to control the actual flow rate dependent upon the flow control signal (**Kar et al.**, U. S. Patent 6,405,745).

None of these references taken either alone or in combination with the prior art of record discloses a Programmable Logic Controller ("PLC") system construction support tool for simulating a selection of units and a combination thereof on a screen before a PLC system is actually constructed, specifically including:

(Claim 1) “a second screen for displaying the units selected from the first screen in a configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen, wherein the second screen displays information in numerical form in an area adjacent to a row of the units on the second screen, the information comprising total values of at least one of current consumption, voltage consumption, width, and weight of each of the units displayed on the second screen; and

wherein whenever a unit is selected from the first screen, at least one of the current consumption, the voltage consumption, the width, and the weight of the selected unit is read from the unit type data file and displayed on the second screen”.

None of these references taken either alone or in combination with the prior art of record discloses a Programmable Logic Controller ("PLC") system program development support tool, specifically including:

(Claim 16) “a second screen for displaying the units selected from the first screen in a configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen, wherein the second screen displays information in numerical form in an area adjacent to a row of the units on the second screen, the information comprising total values of at least one of current consumption, voltage consumption, width, and weight of each of the units displayed on the second screen; and

wherein whenever a unit is selected from the first screen, at least one of the current consumption, the voltage consumption, the width, and the weight of the selected unit is read from the unit type data file and displayed on the second screen”.

None of these references taken either alone or in combination with the prior art of record discloses a Programmable Logic Controller ("PLC") system construction support tool for simulating a selection of units and a combination thereof on a screen before a PLC system is actually constructed, specifically including:

(Claim 20) "a second screen for displaying the units selected from the first screen in a configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen, wherein the second screen displays information in numerical form in an area adjacent to a row of the units on the second screen, the information comprising total values of at least one of current consumption, voltage consumption, width, and weight of each of the units displayed on the second screen; and

wherein whenever a unit is selected from the first screen, at least one of the current consumption, the voltage consumption, the width, and the weight of the selected unit is read from the unit type data file and displayed on the second screen".

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is

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571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2100 Group receptionist: 571-272-2100.

K. Thangavelu  
Art Unit 2123  
December 27, 2005

  
Paul L. Rodriguez 12/27/05  
Primary Examiner  
Art Unit 2125